

REMARKS

Claims 1 - 19 are in the case but have been withdrawn from reconsideration. The examiner has maintained the requirement for restriction and made the same final. If upon finding allowable subject matter the examiner does not rejoin the withdrawn claims, Applicant shall cancel claims 1-19 and file a continuation for further prosecution of these claims.

Claims 24-30 are in the case and are presented for reconsideration.

Claims 20-23 have been cancelled without prejudice.

Claims 24 and 28-30 have been amended.

Claim 24 has been amended to include the limitation that the laminate article is hot pressed followed by cold pressing.

Claims 28-30 has been amended for proper antecedent basis.

Rejections under 35 U.S.C. § 112

Claims 25, 27 and 28-30 were rejected under 35 U.S.C. § 112, second paragraph as being indefinite. Applicant submits that the amendment to claims 24 and 28-30 overcomes this rejection. Accordingly, Applicant respectfully requests that the 35 U.S.C. § 112, second paragraph rejection be withdrawn.

Rejections under 35 U.S.C. § 102

Claim 20 was rejected under 35 U.S.C. § 102 (b) as being anticipated by Takahashi et al. (U.S. 4,656,080). Applicant submits that the cancellation of claim 20 renders this rejection moot.

Rejections under 35 U.S.C. § 103

Claims 21 and 22 were rejected under 35 U.S.C. § 103 (a) as being obvious over Takahashi et al. in view of Hirasaka et al. (U.S. 5,108,678). Applicant submits that the cancellation of claims 21 and 22 renders this rejection moot.

Claims 23-26 were rejected under 35 U.S.C. § 103 (a) as being obvious over Takahashi et al. in view of Spengler (U.S. 4,634,483). With regard to claim 23 Applicant submits that the cancellation of claim 23 renders this rejection moot.

Regarding claims 24-26, Applicant submits that the amendment to claim 24 overcomes this rejection.

Takahashi et al. discloses a method for making a water-repellent substrate consisting of a fibrous sheet impregnated with a water-repellent material, and water-proof thermoplastic resin film layers firmly bonded to both surfaces of the water-repellent substrate with waterproof bonding material layers. One problem that Takahashi et al. sought to solve was the invasion of water, both fresh and salt water, into a waterproof sheet material such as a wind sail. The invasion of water causes the peel strength of the fabric and covering layers to be reduced. Another problem Takahashi et al. sought to solve was preventing the growth of mold and mildew on the fabric when water was absorbed by the fabric. The method for making the water-repellent substrate comprises coating one surface of the two thermoplastic resin films with a liquid containing a bonding material; drying the resultant layer bonding material-containing liquid; impregnating a fibrous sheet with a water-repellent material-containing liquid which is then dried; interposing the water-repellent fibrous sheet between the two resin films so that the surfaces of the substrate are brought into contact with the dried bonding material layers on the resin films; and hot pressing the resultant composite sheet material at an elevated temperature using a pair of nip-heating rollers.

Spengler discloses an apparatus for performing several different operations on an initially flat work piece. Such flat work pieces as cloth, or fabric, or synthetic material films or sheets are laminated to the surface of substructures such as inner car door frames or dashboards or the like. The apparatus has a turntable supported by bearings in a machine base that rotates from a first work station into a second work station and vice versa. Each work station has an upper section supported by a machine frame and a lower section supported by the turntable. The problem that Spengler sought to solve was to keep a fabric in tension while it was moved from one work station to another.

Applicant submits that the combination of Takahashi et al. in view of Spengler would not teach or suggest the presently claimed method of laminating two layer of different materials together. Takahashi et al. clearly teaches sandwiching between two layers of similar material a fabric that has been treated with a water-proofing material. Takahashi et al. teaches spreading the bonding agent and drying the resultant layer bonding material-containing liquid. Takahashi et al.

do not teach or suggest hot pressing the layers followed by cold pressing the layers. Takahashi et al. further do not teach or suggest using a retaining means to align and affix together exposed edges of the polyolefin fabric. Lastly, Applicant submits that the present invention is counter to the stated purpose of Takahashi et al. of preventing water from contacting the fabric. Clearly, a two layer laminated article where one of the layers is the fabric would not prevent fluids from contacting the fabric. Thus, one skilled in the art would not look to the teachings of Takahashi et al. to derive the present invention. Applicant submits that Spengler does not overcome the deficiencies of Takahashi et al. to teach or suggest the presently claimed invention to one skilled in the art. Spengler discloses an apparatus for performing several different operations on an initially flat work piece. Spengler does not teach or suggest how two different types of materials, a polyester and a polyolefin, can be laminated together. Nor does Spengler teach or suggest applying sufficient heat and pressure to cause the bonding agent to flow and spread between said first and third surfaces or that the resultant layer bond-containing material does not have to be dried. Lastly, Spengler does not motivate one skilled in the art to hot press and cold press the laminated structure.

Accordingly, Applicants respectfully submits that claims 24-26 are patentably distinguishable over Takahashi et al. in view of Spengler and request that the 35 U.S.C. § 103(a) rejection be withdrawn.

Claims 27-30 were rejected under 35 U.S.C. § 103(a) as being obvious over Takahashi et al. in view of Spengler and further in view of Eckart et al. (U.S. 5,958,539). Applicant submits that the amendment to claims 24 and 28-30 overcomes this rejection.

As discussed above, Takahashi et al. in view of Spengler would not teach or suggest the presently claimed method of laminating two layer of different materials together. Takahashi et al. in view of Spengler do not teach or suggest hot pressing the layers followed by cold pressing the layers to form the laminated article. Takahashi et al. in view of Spengler do not teach or suggest applying sufficient heat and pressure to cause the bonding agent to flow and spread between said first and third surfaces or that the resultant layer bond-containing material does not have to be dried. Applicant further submits that Eckart et al. does not motivate one skilled in the art to modify the teachings of either Takahashi et al. and/or Spengler, either alone or in combination to derive the present invention.

Eckart et al. teach laminate comprising, in order, (1) an upper sheet material, (2) a fabric comprised of textile fibers, and (3) a lower sheet material to produce a thermoplastic article having the fabric embedded therein. Eckart clearly teaches that using two layers of similar material; an upper layer and a lower layer. Column 4, lines 4-12 of the '539 patent further teaches that when "the upper and lower sheet materials are produced from different copolymers, the copolymers must be thermally compatible". Thus, one skilled in the art would not look to the teachings of Eckart et al. to form a laminated article having two layers made from two different types of materials.

Additionally, Eckart et al. does not teach or suggest hot pressing the layers followed by cold pressing the layers to form the laminated article; or applying sufficient heat and pressure to cause the bonding agent to flow and spread between said first and third surfaces; or that the resultant layer bond-containing material does not have to be dried. Eckart clearly teaches in column 4, lines 54-56 that the use of an adhesive is optional, further supporting that the materials are compatible. Accordingly, Applicant submits that claims 24, 27-30 are patentably distinguishable over Takahashi et al. in view of Spengler and further in view of Eckart et al and request that the rejection be withdrawn.

Lastly, Applicant submits that the teachings of the cited reference Hirasaka et al. (U.S. 5,108,678) would not further motivate one skilled in the art to derive the presently claimed invention. Although the '678 patent teaches forming a laminated article by hot pressing followed by cold pressing, the '678 patent teaches a fiber reinforced plastic sheet having a gradient layer structure wherein the number of reinforcing fibers continuously varies. The process for producing the fiber reinforced plastic sheet includes spreading a mixture of the fibers different in the number of filaments over the traveling zone of a conveyor and then pressing it when it contains a resin. The '678 patent teaches Examples of the fiber are synthetic fibers such as glass fiber, carbon fiber, metal fiber, asbestos and aramid fiber, pulp, cotton and the like; not a polyolefin fiber. The '678 patent further teaches that it is "most important" to the process that the chopped strands are opened to a certain degree to form a distribution from strands themselves or opened up to monofilaments. The process disclosed in the '678 patent is different from the present invention. The present process does not form a gradient layer structure and the polyolefin fabric strands are not opened up.

Applicant further submits that the '678 patent actually teaches away from the present invention where in column 8, lines 25-36 a fiber reinforced plastic sheet having a gradient layer structure was made by hot pressing the fibers and a polypropylene film followed by cold pressing. As seen in Table 1, column 9, Comparative Example 2 was rated "D" as inferior. Thus, one skilled in the art would not be motivated by Hirasaka et al. to make a laminated article having a polyester layer and a polyolefin layer by hot pressing the laminate followed by cold pressing since this would result in an inferior product.

Accordingly, Applicant respectfully submits that claims 24-30 are patentably distinguishable over the cited references Takahashi et al. (U.S. 4,656,080), Spengler (U.S. 4,634,483), and Eckart et al. (U.S. 5,958,539). Applicant respectfully requests that the rejections be withdrawn and the application be passed to allowance at the examiner's earliest convenience.

Respectfully submitted,

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